

What is claimed is:

1. A LED device comprises:

a LED light bulb consisting of a LED chip, bonded wires, both connected to a plurality of lead frames and enveloped by a lamp cap, and one end of the lead frames emerges from the lamp cap;

a plurality of insulating lead wires consist of conductors in the center; the conductor on one end of said lead wire is connected to said emerged lead frame, and said insulator of said insulating lead wire is bent to the back and extended sideward;

a protective device for holding said LED light bulb, the electrical connecting portion and a bent insulator positioning portion to make said insulator not easily be released such that this becomes a safe device.

2. The LED device as claimed in claim 1, wherein said lamp cap consists of flanges so as to connect and position to said protective device.

3. The LED device as claimed in claim 1, wherein said lamp cap is made of plastics.

4. The LED device as claimed in claim 1, wherein said lamp cap is transparent, semi-transparent, or added with fluorescent materials.

5. The LED device as claimed in claim 1, wherein an insulating positioning bracket is installed on said plurality of lead frames so as to firmly fix said lead frames.

6. The LED device as claimed in claim 1, wherein said plurality of insulating lead wires and said LED light bulb are connected together in a form that a plurality of insulating lead wires are parallel.

7. The LED device as claimed in claim 1, wherein said plurality of insulating

lead wires and said LED light bulb are connected together in a predetermined angle.

8. The LED device as claimed in claim 8, wherein said predetermined angle is a right angle or 180° to make said insulating lead wires form into straight lines.
9. The LED device as claimed in claim 1, wherein said conductor and said lead frames are electrically connected by welding or pressure bonding.
10. The LED device as claimed in claim 1, wherein said protective device is transparent, semi-transparent or added with fluorescent materials.
11. The LED device as claimed in claim 1, wherein said protective device holds the entirety or parts of said LED light bulb.
12. The LED device as claimed in claim 1, wherein said protective device is made of a predetermined shape, in regular or irregular shape, or flat or convex/concave.
13. The LED device as claimed in claim 1, it is an enveloped by plastics.
14. The LED device as claimed in claim 1, wherein said protective device is enveloped by a plurality of enveloping plates so as to form a hollow construction.
15. The LED device as claimed in claim 1, wherein openings are reserved on said plurality of enveloping plates so as to install insulating lead wires.
16. The LED device as claimed in claim 1, wherein said plurality of enveloping plates are used with internal border tightly to lock the bent part of said insulator so as not to be easily released.
17. The LED device as claimed in claim 1, wherein said plurality of enveloping plates are firmly fixed by joining or gluing.

18. A LED device comprising:

light emitting elements which consist of at least two predetermined electrodes on the LED chip base, and at least a LED chip is fixed on said LED chip base and connected to one of said electrodes, and two ends of bonded wires are connected to said LED chip and another electrode;

a plurality of insulating lead wires having conductors in the center, and one end of said lead wires is connected to said electrode on the chip base, and moreover, the insulating end of said insulating lead wires are bent to the back and extended sideward; and

a protective device for holding said light emitting elements, electrical connecting portion and the bent insulator positioning portion so as to make them not easily be released and become a safe device.

19. The LED device as claimed in claim 18, wherein a plurality of LED chips are installed on said base in the same or different directions.

20. The LED device as claimed in claim 18, wherein a plurality of insulating lead wires and LED light bulb are connected together in a form that a plurality of insulating lead wires are parallel.

21. The LED device as claimed in claim 18, wherein a plurality of insulating lead wires and LED light bulb are connected together in a predetermined angle.

22. The LED device as claimed in claim 21 wherein said predetermined angle is a right angle or 180° to make said insulating wires in a straight line.

23. The LED device as claimed in claim 18, wherein said insulator and said lead frames are electrically connected by welding or pressure bonding.

24. The LED device as claimed in claim 18 wherein said protective device is transparent, semi-transparent, or added with fluorescent materials.

5 25. The LED device as claimed in claim 18 wherein said protective device is made of a predetermined shape, in regular or irregular shape, and flat or convex/concave.

26. The LED device as claimed in claim 18, it is enveloped by plastics.

10 27. The LED device as claimed in claim 18, wherein said protective device is enveloped by a plurality of enveloping plates to form a hollow construction.

28. The LED device as claimed in claim 18 wherein openings are reserved on a plurality of enveloping plates so as to install insulating lead wires.

15 29. The LED device as claimed in claim 18 wherein said plurality of enveloping plates are used with internal border tightly to lock the bent part of said insulator so as not to be easily released.

30. The LED device as claimed in claim 18, wherein a plurality of enveloping plates are firmly fixed by joining or gluing.

31. A LED device comprising:

20 a plurality of LED light emitting elements having a plurality of connecting electrodes:

a plurality of insulating lead wires having conductors in the center, and one end of said lead wires is connected to said electrode, on the chip base, and the insulating end of said insulating lead wires is bent to the back or extended sideward;

25 a protective device for holding the entirety or parts of said light emitting

elements, different electrical connecting portion and an opening formed by the backward bending and the sideward extension of the top of said insulating lead wires and can be connected in series, parallel or series-parallel in accordance with the directionality of the LED; and

5 a power supply device connected in series to form predetermined functions, words, figures or shapes.

32. The LED device as claimed in claim 31, wherein a plurality of LED light emitting elements are of the same or different functions, and in the same or different color.

10 33. The LED device as claimed in claim 31, wherein said plurality of LED light emitting elements are connected in strings.

34. The LED device as claimed in claim 31, wherein said plurality of LED light emitting elements are connected in arrays.

15 35. The LED device as claimed in claim 34, wherein said arrays are made in different arrangements such as squares, rhombuses, or triangles.

36. The LED device as claimed in claim 34, wherein said arrays can also be formed into a network shape or a curtain type.

37. The LED device as claimed in claim 35, wherein said arrays can also be formed into a network shape or a curtain type.

20 38. The LED device as claimed in claim 34, wherein said arrays are made in a two-plate shape.

39. The LED device as claimed in claim 31, wherein said power supply device is connected by a plug and a socket.

40. The LED device as claimed in claim 31, wherein said power supply device has a function controller so as to form predetermined functions.

41. A method for manufacturing a LED device comprising a LED light bulb and a plurality of emerged lead frames; insulating lead wires consist of conductors in the center and a protective device, the method includes the following steps:

A. Separating the end of said insulating lead wires into at least two plates so as to expose said conductor;

B. Electrically connecting said emerged conductor to said lead frames of said LED light bulb, and bending said insulator of said lead wires to the back and extended sideward.

C. Holding said LED light bulb, electrical connecting portion and insulating part positioning by said protective device.

42. The LED device as claimed in claim 41, wherein said protective device is made from plastics.

43. The LED device as claimed in claim 41 wherein said protective device is formed by a plurality of enveloping plates.

44. The method for manufacturing a LED device comprising a LED chip base, which consists of at least two predetermined electrodes; at least a LED chip, bonded wires; insulating lead wires having conductors in the center; and a protective device, the method includes the following steps:

A. Fixing said LED chip on said LED chip base and electrically connecting to one of said electrodes;

B. Electrically connecting two ends of bonded wires respectively to said LED chip and another electrode;

C. Separating the end of said insulating lead wires so as to expose said conductor in its center;

D. Electrically connecting said exposed conductor to said LED light bulb, and bending said insulator of said insulating lead wires to the back and extended sideward;

E. Holding said LED chip and its base, bonded wires, electrical connecting portion and said bent insulator by said protective device.

45. The LED device as claimed in claim 44, wherein said protective device is made from plastics.

46. The LED device as claimed in claim 44, wherein said protective device is formed by a plurality of enveloping plates.